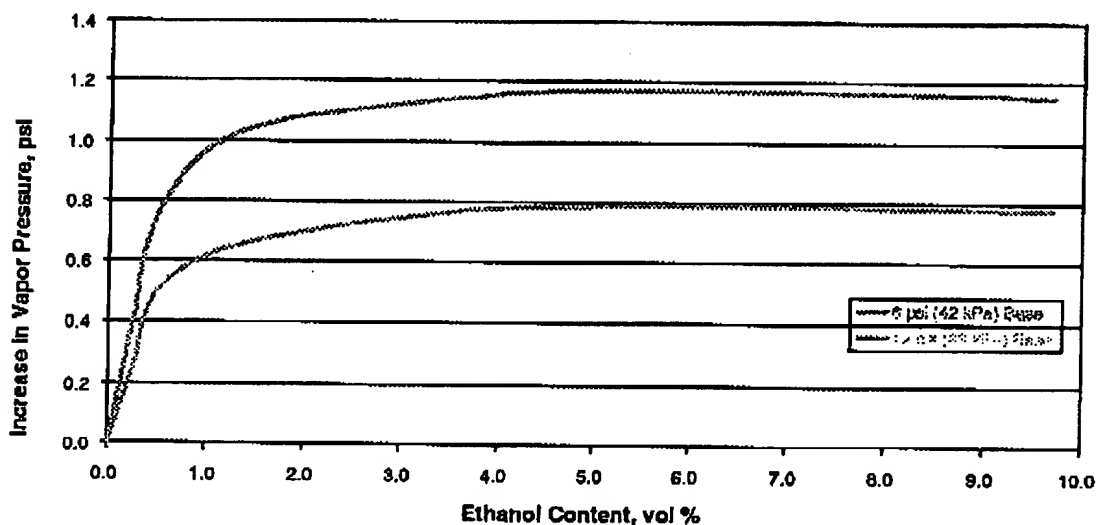


gasoline of around 100 °C. The vapor pressure of neat alcohols is lower than that of gasoline. Consequently one would expect that blending an alcohol with gasoline would reduce RVP and somewhat increase mid-range volatility. However, when alcohol is blended with gasoline at concentrations up to around 30%, an unusual phenomenon occurs. There is an unexpected increase in vapor pressure which causes the blend to have significantly higher RVP than the base gasoline. This is shown in Figure 1 below for ethanol.

Figure 1 : Effect of ethanol addition on Reid Vapor Pressure at two levels of basefuel RVP



The effect of alcohols, such as methanol and ethanol, on the increase in vapor pressure of a gasoline blend is reported in API Publication 4286, a copy of which is attached. Note in particular Figures 9, 10 and 11.

As clearly shown in Figure 9, the maximum RVP increase occurs at around 5-15 % v/v alcohol which is the level of alcohol in most commercial blends. The resulting blend is often too volatile, unless base fuel volatility is adjusted to meet fuel specifications. The addition of 10 %

v/v ethanol to a base fuel composition typically raises the RVP by about 1 psi. The increase for 10% v/v methanol is almost 3 psi. See Figure 10 of API Publication 4286.

Applicants' invention relates to novel compositions which meet RVP specifications by adjustment to the base fuel composition. Note, for instance reference to the preferred butane percentile in the FFB in line 2 of page 15 of the originally filed specification. This, in turn, causes a reduction in the vapor pressure of the light components of the base gasoline. The addition of alcohol to the base gasoline renders a RVP within the claimed limitations. In one embodiment of the invention, the alcohol may be introduced to the base gasoline at a remote location, such as a distribution terminal. This is often necessary since gasoline containing an alcohol cannot generally be shipped via common pipelines.

Examiner's Rejection of Claims Over Orr. The Examiner has rejected Claims 10-17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,039,772 ("*Orr*"). This ground for rejection is traversed. *Orr* is directed to cyclomatic manganese tricarbonyl containing fuel compositions meeting federal hydrocarbon emission standards by the incorporation of an aliphatic alcohol. The Examiner relies upon the reference to the 7.2 RVP in line 53 of column 16. The referenced property, however, is *not* for a gasoline containing alcohol formulation. The section relied upon by the Examiner, line 50 of col. 14 to line 15 of col. 17 is directed, instead, to the "unleaded base gasoline composition". This composition does not contain alcohol. While the reference indicates that the alcohol gasoline formulation may contain an alcohol, it does *not* recite the RVP for the resulting formulation. One would expect, based upon the teachings set forth above and the attached API Publication 4261, that the alcohol gasoline formulation of *Orr*

would have a RVP greater than 7.2. In fact, based on API Publication 4261, the anticipated RVP for the alcohol gasoline formulation of *Orr* would be at least 8.2. *Orr*, therefore, does not anticipate Claims 10-17 of Applicants.

Examiner's Rejection of Claims Over Redacted Gasoline Data/Gasoline Data. The Examiner has further rejected Claims 1-4, 5-6, 7-13, 14-15 and 16-17 under 35 U.S.C. § 102 (b) as being anticipated by Redacted Gasoline Data from Third Party Source ("*Redacted Data*") and Gasoline Data From a Third Party ("*Gasoline Data*"). This ground for rejection is traversed. Both *Redacted Data* and *Gasoline Data* report the same datapoint for a gasoline formulation. This datapoint is from a gasoline formulation collected in Des Moines, Iowa around June, 1992. The references cited by the Examiner are excerpts from a report prepared by Southwest Research Institute ("SRI"). The datapoint relied upon by the Examiner is an outlier and one of skill in the art would have recognized this datapoint to be an outlier. See paragraph 5 of Affidavit of Michelle Ratchford, also attached. In light of the fact that the datapoint is an outlier, and in view of the attached affidavit, this ground for rejection should be withdrawn. See further *In re Yale*, 434 F.2d 66, __ USPQ __ (C.C.P.A. 1970) (correspondence from a co-author of a literature article confirming that the article misidentified a compound through a typographical error that would have been obvious to one of ordinary skill in the art was persuasive evidence that the erroneously typed compound was not put in the possession of the public)

Examiner's Rejection of the Claims Over *Malfer* and *Jessup*. The Examiner has further rejected Claims 1-22 under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No.

6,048,373 ("*Malfer*") in view of U.S. Patent No. 5,288,393 ("*Jessup*"). This ground for rejection is likewise traversed. *Malfer*, like *Orr*, merely discloses a gasoline formulation which contains an alcohol. Applicants do not claim that a formulated gasoline composition containing an alcohol is novel. As stated above and as illustrated in API Publication 4261, the addition of about 5% alcohol to a base gasoline renders an *increase* in the RVP. *Malfer* does not address the RVP of the formulated gasoline and there is no reason to believe that the RVP of the formulated blend would be inconsistent to the teachings of API Publication 4261. *Jessup* does not cure the deficiencies of *Malfer*. In fact, the only disclosure to alcohol or ethanol in *Jessup* appears in line 61 of column 4. The rejection over *Malfer* and *Jessup* is therefore improper and should not be maintained.

Examiner's Rejection of the Claims over *Niebylski* in view of *Cunningham I* and *II*. The Examiner has further rejected Claims 1-29 under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 4,317,657 ("*Niebylski*") in view of U.S. Patent No. 5,551,957 ("*Cunningham I*") and 5,679,116 ("*Cunningham II*"). This ground for rejection is likewise traversed.

Niebylski, like *Orr*, discloses a gasoline composition containing a cyclopentadienyl manganese antiknock agent. The composition may further contain an alcohol. Note the sole reference to an alcohol in lines 1-2 of column 4. *Niebylski* does not discuss RVP, much less the relationship of RVP and an alcohol. Such deficiencies are not cured by *Cunningham I* nor *Cunningham II*. Each of *Cunningham I* and *Cunningham II* merely disclose fuels which may contain an oxygenate. Note, for instance, lines 42-46 of column 15 of *Cunningham I* and lines

63-66 of column 26 of *Cunningham II*; the latter further discloses, like *Orr*, antiknock agents containing an alcohol (see lines 58-60 of column 10). The fact that the secondary references disclose Applicants' dependent claimed ranges relating to 10% and 50% distillation points and RVP does not translate to the conclusion that the fuel composition of the secondary references, when combined with the teachings of *Niebylski*, would render the claimed gasoline formulation of Applicants.

Examiner's Rejection of Claims Under 1st Paragraph of 35 U.S.C. § 112. The Examiner has rejected Claims 1-29 under the first paragraph of 35 U.S.C. § 112 as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. This rejection is traversed. The Examiner's rejection of the *originally filed* claims under the written description requirement of 35 U.S.C. § 112 is misplaced. Originally filed claims comply with the written description requirement. *See Massachusetts Institute of Technology v. AB Fortia*, 227 USPQ 428 (Fed. Cir. 1985):

Original claims constitute their own description. Thus, the requirement is important only when the claims have been amended during prosecution of the application at the Patent and Trademark Office (PTO), being a requirement that the *new definition of the invention* in an amended claim be based on a *description originally in the specification*. The requirement assures that the newly defined invention is entitled to the original filing date of the application. (Emphasis added.)

See, further Department of Commerce, Patent and Trademark Office, "Request for Comments on Interim Guidelines for Examination of Patent Applications Under the 35 U.S.C. § 112 1 'Written Description' Requirement; Extension of Comment Period and Notice of Hearing," 63 Fed. Reg.

50887, 50888 (Sept. 1, 1998), reprinted in Chisum ed., *Chisum on Patents*, § 7.04[1][c] (2000 Cumulative Supplement):

This written description has several policy objectives. '[T]he "essential goal" of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed.' Another objective is to put the public in possession of what the applicant claims as the invention. The written description requirement prevents an applicant from claiming subject matter that was not described in the specification as filed, and the proscription against the introduction of new matter in a patent application serves to prevent an applicant from adding information that goes beyond the subject matter originally filed.

Chisum § 7.04[1][c] at 47 (footnotes omitted). Since Applicants' claims are the originally filed claims and do not comprise a "new definition of the invention", the grounds for rejection should be traversed.

In any event, Applicants clearly had possession of the invention of the claimed gasoline-oxygenate blend having the specified indices for Dry Vapor Pressure Equivalent (DVPE) and alcohol content as delineated in the originally filed specification and claims on the date that the application was filed.

Examiner's Rejection of Claims Under 2nd Paragraph of 35 U.S.C. § 112. The Examiner has further rejected Claims 23-29 under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Amendment of Claims 23-24 and 26-27 obviate the need of the rejection pertaining to as Claims 24 and 28. The Examiner's rejection of Claims 25 and 29 is traversed.

First, Applicants respectfully assert that the claims clearly set forth the area over which exclusive rights are sought by Applicants. This is the criteria of the second paragraph of 35 U.S.C. § 112. As set forth by the C.C.P.A. in *In re Borkowaski*, 164 U.S.P.Q. 642, 645-646 (C.C.P.A. 1970):

The first sentence of the second paragraph of § 112 is essentially a requirement for *precision* and *definiteness* of claim language. If the scope of subject matter embraced by a claim is clear, and if the applicant has not otherwise indicated that he intends the claim to be of a different scope, then the claim does particularly point out and distinctly claim the subject matter which the applicant regards as his invention. (Emphasis in original.)

Second, as stated clearly throughout the specification, the crux of the invention is the use of alcohol to decrease MTBE in the production of gasoline-oxygenate blends in order to reduce emissions. The Doctrine of Claim Differentiation would dictate the conclusion that not all MTBE has been eliminated in independent Claims 23 and 26. Claims 25 and 29 are a refinement to Claims 23 and 26. Reconsideration is therefore requested.

Citation of Art. The Examiner is further requested to acknowledge the two references filed in Supplemental Information Disclosure Statement on April 3, 2001. An additional copy of the Supplemental Information Disclosure Statement and accompanying references are attached.

Amendment to Specification. Amendments have been made to the specification in light of obvious typographical errors. The gasoline blends of Table 8 and Table 9 are the same.

CONCLUSIONS

Attached hereto is a marked up version of the changes made to the Claims by the current Amendment. The attached pages are captioned "Version With Markings to Show Changes Made."

Applicants do not believe that any additional fees are required for consideration of the Supplemental Information Disclosure Statement or any other issues raised in this Amendment. To the extent Applicants are incorrect, the Commissioner is hereby authorized to charge any additional fees to Deposit Account No. 12-1322(Our ref.013129-00025).

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner to issue a Notice of Allowance. The Examiner is invited to telephone the undersigned should it be deemed prudent to expedite examination of this application.

Respectfully submitted,

Dated: June ____, 2001

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CERTIFICATE OF MAILING/TRANSMISSION UNDER 37 C.F.R. 1.6(d)

I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office via facsimile to number (703) 872-9651, Attn: Margaret Medley, Primary Examiner, in Washington, D.C.

DATED: June ____, 2000

John Wilson Jones

DRAFT

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1 1. A gasoline-oxygenate blend, suitable for combustion in an automotive engine, having the
2 following properties:

3 (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and

4 (b) an alcohol content greater than about 5.8 volume percent.

1 2. The blend of Claim 1 wherein the blend has a 50% distillation point less than about
2 195°F.

1 3. The blend of Claim 1 wherein the blend has a 10% distillation point less than about
2 126°F.

1 4. The blend of Claim 1 wherein the blend has an anti-knock index greater than or equal to
2 about 89.

1 5. The blend of Claim 1 wherein the blend is capable of reducing toxic air pollutants
2 emissions by more than about 21.5%.

1 6. The blend of Claim 5 wherein the blend is capable of reducing toxic air pollutants
2 emissions by more than about 30%.

1 7. The blend of Claim 1 wherein the blend has an oxygen weight percent that is greater than
2 about 1.8 weight percent.

1 8. The blend of Claim 1 wherein the blend contains ethanol.

1 9. The blend of Claim 1 wherein the blend contains essentially no methyl t-butyl ether.

1 10. A gasoline-oxygenate blend, suitable for combustion in an automotive engine, having the
2 following properties:

3 (a) a Dry Vapor Pressure Equivalent less than about 7.2 PSI; and

4 (b) an alcohol content greater than about 9.6 volume percent;.

1 11. The blend of Claim 10 wherein the blend has a 50% distillation point less than about
2 178°F.

1 12. The blend of Claim 10 wherein the blend has a 10% distillation point less than about
2 123°F.

1 13. The blend of Claim 10 wherein the blend has an anti-knock index greater than about 89.

1 14. The blend of Claim 10 wherein the blend is capable of reducing toxic air pollutants

2 emissions by more than about 21.5%.

1 15. The blend of Claim 10 wherein the blend has an oxygen weight percent that is greater
2 than about 1.8 weight percent.

1 16. The blend of Claim 10 wherein the blend contains ethanol.

1 17. The blend of Claim 10 wherein the blend contains essentially no methyl t-butyl ether.

1 18. A gasoline-oxygenate blend, suitable for combustion in an automotive engine having the
2 following properties:

3 (a) a Dry Vapor Pressure Equivalent less than about 7 PSI; and

4 (b) an alcohol content greater than about 5.0 volume percent.

1 19. The blend of Claim 18 wherein the blend has a 50% distillation point less than about
2 250°F.

1 20. The blend of Claim 18 wherein the blend has a 10% distillation point less than about
2 158°F.

1 21. The blend of Claim 18 wherein the blend contains ethanol.

1 22. The blend of Claim 18 wherein the blend contains essentially no methyl t-butyl ether.

1 23. A process for preparing a gasoline-oxygenate blend comprising combining a neat blend
2 of hydrocarbons with an alcohol, ~~blending at least two hydrocarbon streams to produce a~~
3 ~~gasoline~~ wherein the resulting gasoline-oxygenate blend has the following properties:

4 (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and

5 (b) an alcohol content greater than about 5.8 volume percent.

1 24. (Once Amended). The process of Claim 23 ~~further comprising introducing ethanol~~
2 ~~during the blending~~ wherein the alcohol is ethanol.

1 25. The process of Claim 23 wherein the resulting blend contains essentially no methyl t-
2 butyl ether.

1 26. (Once Amended). A process for preparing a gasoline-oxygenate blend comprising
2 ~~blending at least two hydrocarbon streams to produce a gasoline~~ combining a neat blend of
3 hydrocarbons with an alcohol, wherein the resulting gasoline-oxygenate blend has the
4 following properties:

5 (a) a Dry Vapor Pressure Equivalent less than about 7.0 PSI; and

6 (b) an alcohol content greater than about 5.0 volume percent.

1 27. (Once Amended) The process of Claim 26 wherein the ~~resulting gasoline-oxygenate~~
2 ~~blend reduces toxic air pollutants emissions by more than about 30%~~ alcohol is ethanol.

1 28. The process of Claim 26 further comprising introducing ethanol during the blending.

1 29. The process of Claim 26 wherein the resulting gasoline-oxygenate blend contains
2 essentially no methyl t-butyl ether.